

REMARKS

Claims 1-23 are pending.

It is believed that this Amendment is fully responsive to the Office Action dated **June 1, 2002**.

Rejection Under 35 U.S.C. §103:

Claims 1, 2, 5-7 and 9-22, are rejected under 35 U.S.C. §103(a) as being unpatentable over **Ouderkirk et al. (U.S. Patent No. 6,124,971)** and further in view of **Liquid Crystals, Applications and Uses, Volume 1**, by **Birendra Bahadur et al. 1990**, (Chapters 7 and 10, especially pages **180, 242, 245 and 270**).

In the outstanding Office action, it has been positively stated that:

“As to Claims 1 and 2, Ouderkirk discloses in claims 1, 2 and 8, (columns 16 and 17) all of the elements of claims 1 and 2, except the color filter disposed on the visible side of the absorption-type polarizing film and the reflection-type polarizing film for transmitting light linearly polarized in a direction parallel with a transmission axis thereof are well known in the art of liquid crystals (see Bahadur, pages 462, 463, and 472). Therefore it would have been obvious to one having ordinary skill in the art of liquid crystals to select a Macneille prism reflection-type polarizer that transmits linearly polarized light in a direction parallel with a transmission axis thereof. Bahadur teaches the use of color filters on pages 180, 242, 245, and 270. Accordingly as evidenced by Bahadur, ordinary workers in the art would recognize the benefit of color filters between the polarizing films. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Ouderkirk with the color filter of Bahadur to achieve color effects in any of a number of ways.”

The Applicant respectfully disagrees with this Office position.

The claimed invention represents a remarkable effect in that a significantly bright color

display can be achieved, by combining a reflection type polarizing film with a color filter.

As to this point, it is described that "light falling on the liquid crystal display panel from the visible side thereof is turned to linearly polarized light by the absorption-type polarizing film and the linearly polarized light is either twisted or not twisted when transmitted through the liquid crystal cell of the liquid display panel, depending on whether a voltage is applied or not applied between the electrodes in parts of the liquid crystal cell through which the linearly polarized light is transmitted. If the light is linearly polarized in the direction parallel to the transmission axis of the reflection-type polarizing film upon reaching the reflection-type polarizing film, the linearly polarized light is transmitted through the reflection-type polarizing film. However, if the light is linearly polarized in the direction crossing the transmission axis of the reflection-type polarizing film at right angles upon reaching there, the linearly polarized light undergoes specular reflection by the reflection-type polarizing film, and is sent back to the visible side," as described from page 6, line 22 to page 7, line 9 of the written specification.

In such a liquid crystal display device, reflection and transmission of the incident light can be controlled by modulating the liquid crystal cell. Further, in the case of reflection, since all of incident light passes through the color filter, "substantially all light falling on the liquid crystal display panel 10, and colored, is reflected" as described in page 18, lines 21-22 of the written specification.

That is, by employing the reflection type polarizing film, reflection and transmission of the incident light can be controlled by modulating the liquid crystal cell, and either of a bright colored light (reflection) and a background color (transmission) can be displayed to the visible side. The

claimed invention discloses the liquid crystal display device which can achieve a brighter display, by combining a reflection type polarizing film with a color filter.

Further, as described from page 27, line 20 to page 28, line 2 of the written specification, a bright transmission display can be achieved even when the external light is dark, if a backlight is provided and is turned on.

As described above, the liquid crystal display device according to the claimed invention can perform a significantly bright color display both in using light falling from the visible side and using light from the backlight, by employing the reflection type polarizing film.

Accordingly, the claimed invention cannot be made by simply combining Ouderkirk et al. and Baduhur. The claimed invention significantly enhanced brightness of display in comparison with conventional liquid crystal display devices employing color filters, and the effect is unobvious from the cited documents.

Section 706.01(j) of the MPEP has specifically stated that:

"To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claimed limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 466, 20 USPQ2d 1438 (Fed. Cir. 1991)"

It is respectfully submitted that the Office has not established a *prima facie* case of obviousness, because, 1) there is not any suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the

reference or to combine reference teachings; 2) there is not any reasonable expectation of success in following the suggestion as stated in the outstanding Office action; 3) the teaching or suggestion to make the claimed combination and the reasonable expectation of success cannot both be found in the asserted prior art.

For the foregoing differences, independent claim 1 patentably distinguishes over the asserted prior art. All claims dependent thereon also patentably distinguish over the asserted prior art. Reconsideration and withdrawal of this rejection are respectfully requested.

Rejection Under 35 U.S.C. §103:

Claims 3, 4, 8 and 9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ouderkirk et al. (U.S. Patent No. 6,124,971) in view of Liquid Crystals, Applications and Uses, Volume 1, by Birendra Bahadur et al. 1990, (Chapters 7 and 10, especially pages 180, 242, 245 and 270) as applied to claims 1, 2, 5-7 and 9-22, and further in view of Hisatake et al. (U.S. Patent No. 5,731,858).

As has been mentioned hereinabove that independent claim 1, as amended, patentably distinguishes over Ouderkirk in view of Bahadur. All claims dependent thereon, by virtue of inherency, also patentably distinguish over the Ouderkirk in view of Bahadur further in view of whatever other references. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

CONCLUSION

In view of the aforementioned amendments and accompanying remarks, all pending claims are believed to be in condition for allowance, which action, at an early date, is requested.

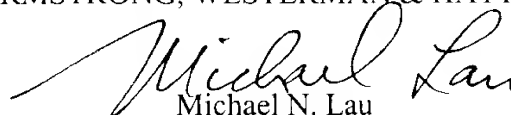
If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

Attached hereto is a marked-up version of the changes made by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully Submitted,

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PATENT TRADEMARK OFFICE

Enclosures: Version with markings to show changes made

IN THE CLAIMS:

Please amend the claims as follows:

1. (Twice Amended) A liquid crystal display comprising:

a liquid crystal cell having a liquid crystal layer sealed in between a pair of transparent substrates thereof, having an electrode on each of the inner surfaces thereof, facing each other;

an absorption-type polarizing film disposed on a visible side of the liquid crystal cell, for transmitting light linearly polarized in a direction parallel with a transmission axis thereof, and absorbing light linearly polarized in a direction orthogonal to the transmission axis thereof;

a reflection-type polarizing film disposed on a side of the liquid crystal cell, opposite from the visible side thereof, for transmitting light linearly polarized in a direction parallel with a transmission axis thereof, and reflecting light linearly polarized in a direction orthogonal to the transmission axis thereof; and

a color filter disposed ~~on a visible side of the absorption-type polarizing film, or~~ between the absorption-type polarizing film and the reflection-type polarizing film.